

Limits to organizational learning

Hitoshi Mitsuhashi,

School of Business and Commerce, Keio University

Tokyo, Japan

mitsuhashi@fbc.keio.ac.jp

ABSTRACT

Although our societies have celebrated a number of social, economic, and technological successes since the beginning of the world, we are still experiencing major failures and problems, including wars, diseases, accidents, airplane crashes, diplomatic failures, policy failures, and economic standstills. In this keynote speech, I am going to talk about (1) the essence of organizational learning, (2) some errors and distortions in organizational learning, (3) one of such errors which I reported in my previous empirical work (i.e., almost identical experience biases), and (4) implications about how we should make progress using insights from research on organizational learning.

JEL Classification: D23, D83

Keywords: organizational learning, errors, distortions

INTRODUCTION

Our societies have celebrated a number of social, economic, and technological successes since the beginning of the world. Digital devices, for example, allow us to make boundary-less communications and timely access to information and knowledge. For example, the sales of Apple Co.'s iPhone grew from 1.4 million units in the fiscal year of 2007 to 125 million units in the fiscal year of 2012. Given that each individual buys one iPhone, the proportions of people all over the world who bought iPhone in a given year increased from 0.02 per cent in 2006 to 1.8 percent in 2012. The iPhone is undoubtedly one of the successful commercialized innovations in the history of the world with substantial impacts on our way of working, thinking, and communicating with others. We also have explored space to understand the universe in which we live. Since the first launch of Space Shuttle in 12 April 1981, the NASA has made 110 launches in total. As of 31 June 2012, there are 528 persons from 38 countries who went into space. In total, they spent 29,000 days in space, equivalent to approximately 77 years. The world has also made great economic progress. According to Angus Maddison's statistics¹, the estimated worldwide GDP grew from USD 5.3 trillion in 1950 and USD 50.3 trillion in 2008 with 95.5 percent growth rates.

¹ <http://www.ggdc.net/maddison/Maddison.htm>

Regardless of these progresses and successes since the modern civilization of the world, some major problems still persist, including wars, diseases, accidents, airplane crashes, diplomatic failures, policy failures, and economic standstills. In 2012, Apple issued a new map application with serious flaw and received massive criticism. The world has experienced a number of serious economic stagnations such as the burst of economic bubbles in Japan in 1992, 1997 Asian Financial Crisis, 2007 Global Financial Crisis, and European sovereign-debt crisis in 2009. Moreover, the National Aeronautics Space Administration (NASA) failed to launch Challenger in 1986 and to reenter Columbia into the Earth's atmosphere in 2003, causing loss of seven crews in each event.

These examples together with our histories indicate not only substantial progresses that our societies have made so far but also failures in making progresses in productive ways. In the field of organization science, research on organizational learning presents some critical insights not only about mechanisms by which organizations learn but also about mechanisms that cause errors and distortions in the processes of organizational learning. These insights give us some implications about what we should know in order to advance our societies as well as how we should make this world better. This study will discuss: (1) the essence of organizational learning, (2) some errors in organizational learning, (3) one of the examples of such errors from my own research (i.e., almost identical experience biases), and (4) implications from research on organizational learning.

THE ESSENCE OF ORGANIZATIONAL LEARNING

Organizational learning refers to “encoding inferences from history into routines that guide behavior” (Levitt & March, 1988: 320) or “making and updating routines in response to experiences” (Schulz, 2001: 415). Organizations learn when experiences cause managers to reconsider and change preexisting routines with their hope for higher performance. Routines are either formal or informal rules about what to do. Many of the works and problems in assembly lines, merchandising, commerce, and even board rooms do not require managers' constant attention and decision making if they adopt standardized rules, whether written or unwritten, for efficiently completing works and effectively resolving problems (March & Simon, 1958). Routines help managers proceed to problems in timely manner and preserve their cognitive resources for issues that require specific attention. For example, in McDonald's, employees do not have to make decisions when new customers enter the restaurants because the routines and in this case the written manuals indicate how to take orders, pick up foods, and serve customers.

Routines develop with the accumulation of experiences. Suppose that you work with a friend who likes to have some structures even in informal meetings. The first meeting is not productive because both of you do not know how to work with each other. On the basis of the first meeting's

experience, you ask your friend to facilitate the second meeting and lead the discussion, resulting in a slight but not significant improvement in productivity. Then, on the basis of this experience, you change and update routines and propose to make an agenda of the meeting and decide not to spend, say, more than twenty minutes on single issues. The activation of this rule significantly increases the productivity, so the rule is institutionalized.

Organizational learning is a process in which managers find what works and what doesn't through experiences and update or adjust routines and know-how to maximize the utilities. Managers need to formulate their own personal "theories" about what causes success and failures. Learning involves assessing whether an outcome of actions is success or failure, depriving cause-effect relations, and embedding the obtained causal relations into routines.

Learning occurs as a result of updating preexisting routines on the basis of previous experiences to meet the expected level of performance. The accumulation offers opportunities for managers to reassess and reconsider preexisting routines and update them for higher performance. Empirical studies have supported this prediction by demonstrating learning effects on economic performance (e.g., Epple, Argote, & Devadas, 1991; Mitchell, Shaver, & Yeung, 1994), product quality (e.g., Lapré & Tsikriktsis, 2006), and survival chance (Baum & Ingram, 1998).

SOME ERRORS IN ORGANIZATIONAL LEARNING

Organizations and individuals certainly learn from experiences and update routines on the basis of performance feedbacks, organizational learning sometimes fails and is subject to errors and distortions. To understand types and causes of cognitive errors in learning is important for productive learning.

Superstitious learning

Superstitious learning occurs when managers make misspecifications of cause-effect relations and embed causations that they erroneously draw from experiences into routines (Levitt & March, 1988; Zollo, 2009). In many cases and events, it is challenging for managers to accurately develop cause-effect relations from their experiences. For instance, in the early 1980s, Japanese automakers attacked US automakers in the American markets. Before this attack, US automakers succeeded in boosting sales by introducing new designs. US automakers consider the drop of sales to result from the designs of Japanese small cars. However, customers were actually attracted to Japanese cars because of their energy efficiency, not designs, so the cause-effect relations that account for sales was erroneously specified, allowing the Japanese makers' further dominance in the US market.

Hot stove effects

We develop our personal theories about causal relations, but sometimes, we formulate them with small sample size and believe the

correctness of the theories regardless of the small sample size (Denrell, 2008). If a cat jumps on a hot stove, she has a bad experience and then will never jump on the stove. This is a reasonable behavior because she learns from this bad experience but unreasonable in a sense that she will never jump on the stove even when the stove is not cold. The issue is not the stove, but the temperature of the stove. In the context of management, this often happens when a firm globalizes its market. Ford Motor started selling big cars in the late 1980s in the Japanese market and experienced performance crisis. Ford then attributed bad sales to the size of its cars, changed its product lines, and started selling small and mid-size cars. However, it failed again because the reason that Japanese customers did not buy Ford cars was not about size, but the quality.

Self-enhancement

Social psychology suggests self-serving biases (Fiske & Taylor, 2007). We tend to attribute success to our internal causes but failure to our external ones. This makes learning processes more difficult because the update of routines does not initiate if we consider preexisting routines not to cause failures. For example, Mitsubishi Motor used to sell trucks with serious flaws, which caused deaths of users. However, the company did not admit its technical error but accused the users for poor maintenance. This attribution does not help the company improve its product quality, and the cost of compensation for death is about JPY 100 million.

ALMOST IDENTICAL EXPERIENCE BIASES

Let me briefly explain one of my own empirical works about biases and distortions in organizational learning, which I published in *Industrial and Corporation Change* in 2012 (Mitsuhashi, 2012). The research question then was why an organization repeats an error that other organizations in the same industry have already made and under what conditions an organization fails to learn from others' experiences. Learning from others' experience (i.e., vicarious learning) is particularly important for high reliability organizations such as airlines, hospitals, and nuclear power plants because the cost of experiencing failures is extremely high.

My prediction was as follows: (1) managers exhibit bounded rationality and have limited attention, (2) managers heed their attention to external events that are salient to them, (3) whether an external event is salient or not is contingent upon what they have already experienced (i.e., the repositories of experience), (4) if an event is slightly different from but highly similar with ones that managers have already experienced, they are more likely to presume that they do not have to learn from it due to the high similarity, and (5) thereby this presumption cause the repetition of past errors that other organizations have already made. We are unlikely to learn from others' experience that is almost identical with our own previous experiences.

Predictions were tested with the data of incidents and accidents in Japanese nuclear power plants from 1966 to 2006. The data supported initial predictions – managers pay disproportionately less attention to and learn less from an external event if it has attributes almost identical to those that they have encountered in the past. It is important to emphasize that with these theories and empirical evidences, I have no intention to blame managers' laziness or overconfidence in this industry. Instead, I intend to point out that because of bounded rationality and limited cognitive capabilities, our capabilities to learn accurately and completely from experiences can be restricted.

CONCLUSION

This study discussed the following issues: (1) our societies have made substantial progresses but the progresses are limited in some sense, (2) this progress as well as the limits can be attributed to the quality of learning, and (3) some errors and biases in organizational learning were identified, which include almost identical experience biases. We certainly learn from our experience but only limitedly so. The implications from my discussions are as follows: (1) we should make efforts to learn from experiences and develop our own theories about what works and what does not, (2) in doing so, we have to recognize potential biases and distortions because they can decrease the quality of knowledge that you gain from experiences, and (3) you should always challenge your own theories about what works and what does not and view your theories as tentative ones because the theories can be inaccurate. Finally, given that the progress of societies rest partially on learning, it is important to study what increases and inhibits the rates of learning.

REFERENCES

- Baum, J. A. C., & Ingram, P. (1998). Survival-enhancing learning in the Manhattan Hotel Industry, 1898-1980. *Management Science*, 44, 996-1017.
- Denrell, J. (2008). Organizational risk taking: adaptation versus variable risk preferences. *Industrial and Corporate Change*, 17(3), 427-466.
- Epple, D., Argote, L., & Devadas, R. (1991). Organizational learning curves: A method for investigating intra-plant transfer of knowledge acquired through learning by doing. *Organization Science*, 2(1), 58-70.
- Fiske, S. T., & Taylor, S. E. (2007). *Social Cognition: From Brains to Culture*. Boston: McGraw-Hill.
- Lapr e, M. A., & Tsikriktsis, N. (2006). Organizational learning curves for customer dissatisfaction: Heterogeneity across airlines. *Management Science*, 52(3), 352-366.
- Levitt, B., & March, J. G. (1988). Organizational learning. *Annual Review of Sociology*, 14, 319-340.
- March, J. G., & Simon, H. A. (1958). *Organizations*. New York: Wiley.

- Mitchell, W., Shaver, J. M., & Yeung, B. (1994). Foreign entrant survival and foreign market share: Canadian companies' experience in United States medical sector markets. *Strategic Management Journal*, 15(7), 555-567.
- Mitsuhashi, H. (2012). Almost identical experience biases in vicarious learning. *Industrial and Corporate Change*, 21(4), 837-869.
- Schulz, M. (2001). Organizational learning In J. A. C. Baum (Ed.), *Companion to Organizations* (pp. 415-441). Oxford, UK: Blackwell Publishers.
- Zollo, M. (2009). Superstitious learning with rare strategic decisions: Theory and evidence from corporate acquisitions. *Organization Science*, 20(5), 894-908.